

THE FIREMAN'S BEST WEAPON

HIGH PRESSURE REDUCING FIRE LOSSES.

Facts Not Generally Known About the System in New York—Experience of Other Cities—San Francisco to Have \$5,000,000 High Pressure Service.

The large percentage of combustible buildings and the improper conditions as regards safety that obtain in most American cities have finally forced upon the attention of municipal governments the necessity of making provision for an absolutely trustworthy fire fighting weapon. It is the opinion of fire underwriters and expert engineers, says Herbert T. Wade in his article upon "High Pressure Fire Protection" in the current *Review of Fire Protection*, that the high pressure service is most imperative in cities of any great size, that it is the best weapon against fire yet evolved and that its installation should be required in all cities where there are congested and hazardous risks because of the percentage of dangerous buildings in close proximity.

"During a transitional period, as it were," Mr. Wade says in summing up his subject, "when new construction is mainly fireproof or fire resisting fire protection for our cities is an expensive and important consideration. However, it is the price that must be paid for errors of the past, and the American people cannot compare conditions in their own cities with those of Europe, where for centuries building has taken place with due regard to the danger of fire; so that for American cities with their tall buildings and congested districts the high pressure service is the main fire protection in the future must consist in an adequate water supply at a higher pressure than the average domestic supply, administered by fire departments no ways inferior to those of the present day, as regards organization and personnel, but even better equipped for meeting extraordinary emergencies.

"For such conditions the independent high pressure fire service of to-day is the most useful means that the fireman has at his disposal, and engineers and underwriters believe with all confidence that it will prove in any serious test with an actual fire."

The writer points out at the outset that an adequate water supply, available at any part of the city and in an unlimited volume, is the chief asset in reducing fire losses in American cities. There are very few cities on this side of the Atlantic that have a city water works capable of exerting enough pressure to throw streams of water to the upper stories of high buildings, and fewer yet in whose streets are laid mains large enough and strong enough to carry a volume of water under sufficient pressure to be wholly adequate in time of emergency.

In most cities the mains and standpipes on the buildings were installed in the day of low pressure, and even with facilities at hand for getting a strong head on the water used in fire fighting the weakness of the pipes prevents any attempt at increasing the pressure.

In too many cities, too, the increase in population and spread of buildings have far outdistanced the limit of usefulness of the water available for fighting fires. It is in just such communities, and their number is great, that the insurance men have raised rates to such an extent that far-sighted citizens in control of the government are beginning to see that although the expense of installation of a high pressure system is great a compensation out of all proportion to the first outlay will speedily follow through the reduction of the insurance risks.

The city of Cleveland was the first to evolve something out of which developed the modern idea of high pressure fire service. It was in 1888 that the municipality authorized the laying of a six-inch cast iron main to take water to the top of a nearby bluff, a distance of 700 or 800 feet. Whenever there was a fire in the vicinity of this main a fireboat, one of the earliest of its kind, coupled up to the river end of the pipe and sent a stream of water up to the spot where the auxiliary supply was most needed.

Milwaukee, Detroit and Buffalo later adopted this special fireboat auxiliary. In the two latter cities the original single line of pipe was expanded to a system, and now the substitution of permanent pumping stations to take the place of the fire tugs in insuring a quick and steady application of high pressure is being contemplated. In Milwaukee a 10 per cent. reduction of insurance rates has followed the installation of this adjunct to the water supply and in Buffalo there has been a reduction of 30 cents on each \$1,000 of insurance.

The city of Boston was the next to take up the new idea. In 1897-98 there was installed there a permanent system of cast iron underground mains, 5,000 feet in length, which was to offer an auxiliary supply of salt water, pumped from the sea constantly at berth at the bay end of the main. This extension of a special high pressure service over a limited area was extensively imitated until first Philadelphia and then New York made the wide step of installing over a large area a high pressure system controlled by permanent pumping stations.

In giving an outline of the spread of the

high pressure idea the *Review of Fire Protection* pays merited attention to the big project that is soon to be put through by San Francisco. Having once suffered so terribly because its water system failed it in emergency the Pacific Coast city has bonded itself to the extent of \$5,200,000 for the purpose of putting in a new high pressure fire protection and an auxiliary salt water system.

For fire purposes it has been decided to install an independent system with mains aggregating over ninety miles in length. These are to be fed by two great reservoirs, each of 5,000,000 gallons capacity, which are to be constructed at a height of 765 feet above the lower portions of the city.

Two complementary reservoirs are to be constructed at lower elevations which will supply the ordinary pressure on the city's mains, but the highest reservoirs will be able to keep, through force of gravity, a constant high pressure head upon all the fire mains. This system promises to be capable of throwing from 8,000 to 12,000 gallons a minute on any single block within the area of the high pressure service.

The salt water emergency plants are to be built on rock near the shore of the bay so as to be in as great a measure as possible earthquake proof. Each of the two stations projected will be fitted with oil burning centrifugal pumps of a maximum capacity of 16,000 gallons a minute under 300 pounds pressure. The salt water stations will be independent of each other so that the failure of one will not impair the work of the other or the system as a whole.

The writer gives the main outlines of New York's high pressure system, citing some facts not generally known to the public. Mr. Wade says:

"In Manhattan the problem was naturally more extensive and complicated [than in Brooklyn], for here was a region of congested buildings, of tall buildings and character probably unequalled anywhere in the world. It was necessary to increase greatly the fire protection and the amount of water, especially in certain downtown districts, and accordingly it was determined to install a high pressure fire main system within the district bounded by Twenty-third street, Third avenue and the Bowery, Chambers street and North River, with two pumping stations, one at Oliver and South streets on the East River and the other at Gansevoort and West streets on the North River.

"In July of the present year this system was put into operation and involves some sixty-three miles of extra heavy cast iron mains through which can be forced more water than all the fire engines in the borough can pump, and what is more, this supply can be concentrated on any single block. In other words, when the fire central pump at each station is working together the combined capacity exceeds 30,000,000 gallons a minute, and space has been left at each station for installing three additional units.

In the Manhattan system great care has been taken to remedy the previous grave defects of the distribution systems, which amounted to 1,454 acres, or about one-tenth the area of Manhattan Island, is surrounded by twenty-four inch mains, while mains of that or smaller size down to six inches in diameter are completely gridded in the district.

"On these 1,272 hydrants are so placed that there is always one within 400 feet of any single building and the fire central pump at each station is working together the combined capacity exceeds 30,000,000 gallons a minute, and space has been left at each station for installing three additional units.

"Thus, for the block bounded by Twenty-third street, Fifth and Sixth avenues and Twenty-second street there are available sixteen hydrants, from which in one day, with the pumps working at full capacity, enough water could be obtained to cover the block to a depth of thirty-six feet—in other words, 5,760,000 cubic feet, or 45,000,000 gallons."

CAROLINA COAST WHALING

GOOD CATCHES HAVE BEEN MADE AROUND BEAUFORT.

Not a Regular Occupation, but Somebody is Always Ready to Join in Chase When Whale Appears—The Equipment for Fishing and the Method of Capture—Naming Victims of Harpoons.

Whaling has been practiced around Beaufort for a good many years, and is yet to a small extent. Several species of whales are known there, but only one, the black or north Atlantic right whale (*Eubalaena glacialis*), is ever sought. This species is similar in many respects to the Arctic bowhead, but is less bulky and commercially less valuable.

Comparing specimens of equal length the head of the right whale is both shorter and less deep, and produces in consequence shorter whalebone in smaller quantity. Its habitat being more southerly it does not need the same thickness of fatty covering (blubber) to protect it against the cold as does its Arctic relative, and that of shorter length, and producing much less oil, our friend of this region loses out all around when it comes to a showdown.

An occasional sperm whale has been seen off our coast, says H. H. Brinley in the *Charlotte Observer*, and some years ago one came ashore near Wrightsville. Finbacks are sometimes seen and a school of blackfish (the Norwegian "grind" whale) about twenty years ago, but when we speak of whales on this coast we refer to the black whale.

I don't know how long the fishermen of the Beaufort-Morehead-Cape Lookout region have been hunting whales off shore, but the fishery seems to be of long standing. Whaling is not the regular occupation of any one, the appearance of the animals being too irregular, but it has been the custom during the season when whales are likely to be seen to keep a whaleboat or two on the ocean side of "the banks" ready for launching in case of need.

Such boats are clinker built and very much on the model of the regular whaleboats, but somewhat smaller. They are usually equipped with a couple of harpoons and several lances, each with its proper carps (lines) and drags and floats attached. There are one or two guns owned in the neighborhood. These are of the old fashioned muzzle loading type and play a not unimportant part in the killing—when they go off. Unfortunately the occasions for using them are so few and far between and come so suddenly when they do come that the gun is in most cases picked up and hurriedly carried down to the boat in whatever condition it may happen to be at the time. It may have been loaded for a year or two or the inside of the barrel may be rusty and damp from the salt air. Anyway, the result is often a misfire or an unexploded bomb, and maybe a lost whale.

These guns weigh about eighteen pounds each and have a twenty inch barrel with an iron stock, and they would not be much of a weapon for woodcock or snipe. The bore is about seven-eighths of an inch and the load is of black powder, with an eighteen inch explosive bomb in front of it. This explosive missile has a triangular point ground very sharp,

and rubber "feathers" at the base to keep it end on in its flight. It contains one ounce of powder and has a two second fuse in a base that is ignited by the discharge of the gun. This gives time for it to penetrate the whale's vitals before exploding. The vital spot is the lungs, called by whalers the "life."

When a whale is sighted and enough are at hand to form a crew, one or more boats are manned and put out in chase. The first object of the whalers is to get a harpoon in. To do this the boat approaches very quietly when the animal is up to breathe, broadside on, and if the approach is successful and the boat gets close enough the harpoon is thrown. In this kind of whaling only short warps are used on the harpoons. In contrast to the very long lines used in the deep sea and Arctic fisheries. There is no particular effort made to maintain a constant connection between the whale and the boat until the former is killed, and the "drag" (wooden block) at the end of the warp remote from the harpoon is usually thrown overboard very soon after the whale is struck. This drag acts as a buoy in marking the course of the "fish" and the boats follow on in readiness for the whale's next rise.

When he comes up they endeavor to be as close as possible, and before he goes down again every effort is made to approach near enough to use gun or lance, or both. The lance has a leaf shaped blade, with no barbs, ground very sharp, and has a long iron shank fitted to a wooden handle. This is driven into the whale's back, between the ribs and into the lungs, if possible, with a stabbing motion, being withdrawn or left sticking in as the case may be. The gun also comes into play, the objective point of its projectile also being the lungs.

And so the contest goes on, the whale usually heading out seaward and the one object of the whalers all through being to get close enough at every rise to the surface of the stricken animal to get at him with gun, lance and harpoon. At last the death flurry comes. The stricken whale is spouting from his blowhole and the water is beaten into foam by the struggles of the great beast, gradually getting weaker and fainter, until at last the vast bulk lies still and lifeless, gently rocking and rolling to the never ending Atlantic swells.

In the case of the large female killed in 1904 the final act of the whalers was to tow the whale to the beach and the great carcass had to be towed by the rowboats that distance back to land. This was quite a valuable take. The "bone" was long and weighed over 800 pounds and the blubber produced about thirty-nine barrels of oil. The total cash value of this whale to the fishermen was about \$1,900. Its length was 58 feet.

As a contrast the small male killed last May did little more than pay expenses. As this last is the latest capture on our coast some details may be of interest. On Sunday morning, May 17, 1908, a whale was sighted inside the light of Cape Lookout. John Rose, a fisherman living nearby, manned a boat and put out in chase. The boat was run up close with but little trouble, and Rose himself put the harpoon in.

The harpoon—a toggle iron in this case—was well put in and the boat followed with lance and gun to make the kill. The gun, one of those old fashioned muzzle loaders before mentioned, missed fire and the men went to work with the lances, killing the whale in an hour or less from the time he was first struck. It was regarded by the fishermen as an exceptionally easy kill.

There being no tryptops or cutting spades available near by, the owners decided to tow the whale to Beaufort and exhibit it there. Though not a large specimen by any means it grounded on the shoals in towing in and a whole side was lost before it was finally brought to town and hauled out on the shipways. It proved to be a small male specimen of the north Atlantic right whale, about thirty-nine feet in length. Its color was the usual dense ivory black all over,

with no trace of white on the under parts. It was in poor condition, the blubber showing a thickness of only about four inches where the harpoon had been out, and no effort was made to save the oil. The whalebone I was not able to examine but was told that it was about three feet long and weighed in the rough, green and uncleaned, about 300 pounds. These figures seem small, both in length and total weight, compared with what one would expect from a whale of this size, more particularly as the owners told me that they did not expect the cleaned and dry "bone" to run over 150 pounds.

Another whale was harpooned and fastened by the Cape Lookout fishermen a couple of weeks before this, but he carried the boats out to sea and was finally outloose.

I found out one interesting point in regard to this North Carolina whaling that was entirely new to me. That is the practice of naming the whales killed. Thus I mentioned the specimen of which we have the skeleton in the museum here and the man to whom I was talking remarked at once: "Why, that is old May; flower; I remember his being caught."

Further inquiry brought out the fact that the whale then on hand had been named "Big Sunday" from having been killed on that day.

The large cow whale killed in 1904 was called "The Little Children." It seems that but few men were at hand when she was sighted so the boats were manned by any one available, mostly boys. Hence the name. A small whale also killed in 1904 was named the "Lee" whale from the fact that it was harpooned by Lee Guthrie. My informant could not recall the name of the 1888 specimen.

While down at Beaufort on this occasion I was told a yarn that I repeat here, but for which I will not vouch. One morning this spring a fisherman living at the cape (Cape Lookout) went down to the shore to look around and see what there was to be seen. He noticed a whale inside the light of the cape playing around in the water and sometimes jumping clear. At certain points in the light the water shoals very rapidly, and in one of his jumps the whale stranded on a high shoal in very shallow water and there remained, quite unable to struggle clear. The fisherman went back to his house to get his harpoon and a long stake, and with them he returned to the whale. He stuck the stake down in the whale's sand near his captive (if one may call it so) and went up to the whale and drove the harpoon in good and deep. Then he strolled up the beach to tell of his good luck that morning.

Now sand don't hold stakes over well unless properly planted, and a whale is a pretty big thing to tie up to a hitching post with a five-eighths inch line. The tide rose a few feet; the whale flinched his tail about twice, slid off the shoal—and went to sea. So if anybody should come across a stray whale with a harpoon stuck in its blubber and with a cedar post attached to the harpoon line he will confer a favor by communicating with John Doe, Cape Lookout, N. C., who will call and get his property.

Losing the Use of Our Legs

From the *Lady's Pictorial*.

A French journal gloomily prognosticates that we shall have lost the use of our legs in a generation or two. The tendency of the age is to invent means by which human beings are conveyed from place to place as quickly and cheaply as possible.

People certainly walk far less now than they did twenty-five years ago; they will walk still less in fifty years time. When a century has passed, perhaps, as our French contemporary suggests, we shall altogether have forgotten how to walk, and our descendants will hop like birds when they are on the level and fly when they get the chance. But what will become of their lives? And how are the poor things ever to enjoy the delights of looking at the shops?

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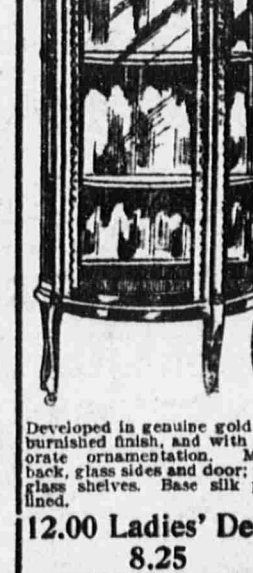
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